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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/576,344

04/18/2006

Miwako Ito

000407.00075

7381

22907 7590 03/02/2010

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EXAMINER

WILKINS III, HARRY D

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

03/02/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/576,344	Applicant(s) ITO ET AL.	
	Examiner Harry D. Wilkins, III	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☒ Claim(s) 1,2,18 and 19 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>4/18/06</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

1. Claims 1, 2, 18 and 19 are objected to because of the following informalities: in each of claims 1, 2, 18 and 19, in line 7 (claim 1, 2, 18) or line 6 (claim 19) “chloride-on” should be “chloride-ion”. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 25 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 19 recites carbon dioxide gas stored in the carbon dioxide gas cylinder, and claim 25 attempts to redefine the contents to be carbonated water. It appears that the claim should read “the carbonated water stored in the cold water storage tank” to correspond to figure 15 as filed.

Claim Rejections - 35 USC § 112 - Sixth Paragraph

Means-Plus-Function Language

4. Instant claims contain the following terms written in means-plus-function format, and have been interpreted as follows:
 - a. “Mineral water generation means” - claims 1, 2, 18, 19, 20
Interpreted to mean the electrolytic bath including an anode and cathode and mineral elution material.
 - b. “Mineral water leading means” - claims 1, 2, 18, 19

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Interpreted to mean the pipe and any necessary pumps for moving the electrolyzed water from the mineral water generation means to the storage tank(s).

- c. "Cold water supply means" - claims 1, 2, 18, 19, 20

Interpreted to mean the piping, valve and nozzle for moving cold water to the user from the cold water storage tank.

- d. "Hot water supply means" - claims 2, 18, 19, 20

Interpreted to mean the piping, valve and nozzle for moving cold water to the user from the hot water storage tank.

- e. "Carbon dioxide gas supply means" - claims 18, 19, 20, 21

Interpreted to mean the piping, valve and connection for moving carbon dioxide to the cold water supply means from the carbon dioxide gas cylinder.

- f. "Drain means" - claim 22

Interpreted to mean a structure capable of draining the contents of the hot water storage tank.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being obvious over Kuroki et al (JP 09-248574) in view of Hashimoto et al (JP 2000-335691) and Sato et al (US 6,126,797).

Kuroki et al teach (see English abstract and figure 1) an apparatus for supplying mineral water comprising a mineral water generation means having an electrolytic bath, a mineral eluting electrode for applying a DC voltage to the bath and a mineral eluted substance containing a mineral component that is eluted, and a mineral water leading means (outlet 6) for leading the mineral water out of the mineral water generation means.

Kuroki et al teach a water storage tank (8), but do not teach that the water is cooled in the tank.

Further, Kuroki et al fail to teach the electrolytic bath containing chlorine-ion to permit formation of hypochlorous acid to prevent bacteria formation in the storage tank.

Hashimoto et al teach splitting a generated mineral water stream into separate cold and hot water streams and storing the split flow in individual storage tanks equipped with a chiller and heater, respectively.

Therefore, it would have been obvious to one of ordinary skill in the art to have added the cold water storage tank with chiller and the hot water storage tank with heater of Hashimoto et al to the apparatus of Kuroki et al to permit providing hot and cold mineral water to a user.

Hashimoto et al recognized that sterilization problems occurred in the cold water storage tank and proposed using an ultraviolet light source to sterilize the water. This is discussed in Applicant's own specification on pages 1-2.

Sato et al teach (see col. 1, lines 10-26, col. 1, line 44 to col. 2, line 4 and paragraph spanning cols. 5 and 6) that a manner of providing sterilization of water involves ensuring chlorine ions being present in the water, and application of a d.c. electric voltage to cause hypochlorous acid to be generated from the chlorine ions.

Therefore, it would have been obvious to one of ordinary skill in the art to have substituted the generation of hypochlorous acid taught by Sato et al for the UV light disinfection step of Hashimoto et al because each teaches a functionally equivalent method of providing sterilization of the water in the system.

Since the mineral water generation means of Kuroki et al already included a d.c. voltage source and electrodes, one of ordinary skill in the art would merely have been motivated to ensure that the water entering the electrolytic bath of Kuroki et al contained the chlorine ions required by Sato et al.

Regarding claim 3, it would have been obvious to one of ordinary skill in the art to have added a pump when and where necessary to cause movement of the water from one portion of the apparatus to another downstream portion.

7. Claims 4-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroki et al (JP 09-248574) in view of Hashimoto et al (JP 2000-335691) and Sato et al (US 6,126,797) as applied to claims 1-3 above, and further in view of Watanabe et al (JP 2003-062574).

The teachings of Kuroki et al, Hashimoto et al and Sato et al (US 6,126,797) are described above.

These references do not teach a purifying bath for purifying the mineral water.

Watanabe et al teach (see figures 11 and 13 and paragraphs 74 and 77) that it is preferable to purify generated mineral water before it is sent to a user, generally by means of a "sludge removal tub" (108) which is an activated carbon filter.

Therefore, it would have been obvious to one of ordinary skill in the art to have added the activated carbon filter taught by Watanabe et al to the apparatus of Kuroki et al for the purpose of providing further purification of the mineral water before sending it to the user.

Regarding claim 6, any device is considered "separable" as any connection in the device of Kuroki et al is capable of being removed, such that the portion of the apparatus including the mineral water generation means, the purifying bath and the pump could have been separated from the cold-and-hot water generation portion.

Regarding claim 7, it would have been obvious to one of ordinary skill in the art to have added an additional activated carbon filter prior to the mineral water generation means to permit additional purification of the generated mineral water.

Regarding claim 8, Kuroki et al teach recirculation of the generated mineral water back to the electrolytic bath (see figure 1). It would have been obvious to one of ordinary skill in the art to have controlled this recirculation with a valve.

Regarding claim 9, it would have been obvious to one of ordinary skill in the art to have added a bypass pipe to permit mineral water to bypass the purifying bath to avoid

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interruptions in mineral water service when either the purifying bath is removed to replace the activated carbon filter or should the filter itself become clogged.

Regarding claims 10 and 11, Hashimoto et al teach the claimed valves (16 and 15 in figure 1).

Regarding claim 12, it would have been obvious to one of ordinary skill in the art to have provided an automated recirculation of mineral water from the storage tanks to the electrolytic bath after a certain amount of time had passed in order to ensure an adequate concentration of hypochlorous acid existed in the cold water storage tank to permit sterilization.

Regarding claim 13, when recirculating the mineral water from the cold water storage tank, it would have been obvious to one of ordinary skill in the art to have bypassed the activated carbon filter because the water then passing through the system had already passed through the activated carbon filter once.

Regarding claims 14-16, the generation of hypochlorous acid was through application of a d.c. voltage through the mineral eluting electrode.

Regarding claim 17, the control system of Sato et al included polarity switching means for reversing the polarity of the electrodes. Further, one of ordinary skill in the art would have been motivated to use such polarity reversal during the hypochlorous generation step to prevent more mineral from being dissolved into the water from the mineral eluting electrode because the water already contained sufficient amounts of the mineral.

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8. Claims 18-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroki et al (JP 09-248574) in view of Hashimoto et al (JP 2000-335691), Sato et al (US 6,126,797) and Mazza (US 3,785,492).

Kuroki et al teach (see English abstract and figure 1) an apparatus for supplying mineral water comprising a mineral water generation means having an electrolytic bath, a mineral eluting electrode for applying a DC voltage to the bath and a mineral eluted substance containing a mineral component that is eluted, and a mineral water leading means (outlet 6) for leading the mineral water out of the mineral water generation means.

Kuroki et al teach a water storage tank (8), but do not teach that the water is cooled in the tank.

Further, Kuroki et al fail to teach the electrolytic bath containing chlorine-ion to permit formation of hypochlorous acid to prevent bacteria formation in the storage tank.

Hashimoto et al teach splitting a generated mineral water stream into separate cold and hot water streams and storing the split flow in individual storage tanks equipped with a chiller and heater, respectively.

Therefore, it would have been obvious to one of ordinary skill in the art to have added the cold water storage tank with chiller and the hot water storage tank with heater of Hashimoto et al to the apparatus of Kuroki et al to permit providing hot and cold mineral water to a user.

Hashimoto et al recognized that sterilization problems occurred in the cold water storage tank and proposed using an ultraviolet light source to sterilize the water. This is discussed in Applicant's own specification on pages 1-2.

Sato et al teach (see col. 1, lines 10-26, col. 1, line 44 to col. 2, line 4 and paragraph spanning cols. 5 and 6) that a manner of providing sterilization of water involves ensuring chlorine ions being present in the water, and application of a d.c. electric voltage to cause hypochlorous acid to be generated from the chlorine ions.

Therefore, it would have been obvious to one of ordinary skill in the art to have substituted the generation of hypochlorous acid taught by Sato et al for the UV light disinfection step of Hashimoto et al because each teaches a functionally equivalent method of providing sterilization of the water in the system.

Since the mineral water generation means of Kuroki et al already included a d.c. voltage source and electrodes, one of ordinary skill in the art would merely have been motivated to ensure that the water entering the electrolytic bath of Kuroki et al contained the chlorine ions required by Sato et al.

Kuroki et al, Hashimoto et al and Sato et al fail to teach a carbon dioxide gas cylinder and carbon dioxide gas supply means as claimed.

Mazza teaches (see figure 2 and col. 6, line 6 to col. 7, line 19) that it is occasionally desired by the end user of mineral water to have the mineral water carbonated, and that structure for doing so included a carbon dioxide gas cylinder (59) and means for moving the carbon dioxide gas into the water.

Therefore, it would have been obvious to one of ordinary skill in the art to have added the carbon dioxide gas cylinder and carbon dioxide gas supply means taught by Mazza to the structure of Kuroki et al to permit the hot and/or cold mineral water of Kuroki et al in view of Hashimoto et al to be carbonated as desired by the user.

Regarding claim 22, Hashimoto et al teach both dispensing means (7) and drain means (15) on the hot water tank.

Regarding claims 23 and 24, it would have been obvious to one of ordinary skill in the art to have simplified formation of carbonated mineral water by forming the carbonated mineral water only in the cold water storage tank and then feeding such to the hot water storage tank as needed to allow only one carbon dioxide gas supply means to be utilized.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry D. Wilkins, III whose telephone number is 571-272-1251. The examiner can normally be reached on M-F 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Harry D Wilkins, III/
Primary Examiner, Art Unit 1795

hdw